UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
GEREZGIHER, YEMANE M

ART UNIT	PAPER NUMBER
2144	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 January 2006</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>24-39</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>24-39</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>23 May 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   This application has been examined. Newly presented claims 24-39 are

now pending in this application.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and
> distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claim 39 is rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention.

The inventive entity recites the limitation "the receiver unit" in claim 39,

Line 4 and further recites "the subpath" in claim 39, Line 9. There is

insufficient antecedent basis for these limitations in the claim. No "subpath"

and "receiver unit" have been previously defined in the claim.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in

this Office action:

> A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 24, 34 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Carpini et al., (US 20030063613 A1) hereinafter referred to as Carpini.

As per claim 24: Carpini disclosed a method of segmenting a label switched path (LSP) present in a multi-protocol label switching (MPLS) network, the LSP having an ingress label switched router (LSR), an egress LSR and intermediate nodes [Fig. 7, Page 3, ¶s0034-0038 and Page 8, ¶0079], the method comprising steps of:

Determining a subpath to be segmented in the LSP [Fig. 7 (also disclosed below) and Page 8, ¶0079, a Primary PLS #203 is segmented into sub paths]; defining segments in the subpath [Fig. 7, segments representing the sub paths are defined]; associating a label to each segment defined in the subpath [Fig. 7 and 8, ¶0077 and ¶0079, defined segments and the sub paths of the primary LSP are labeled].
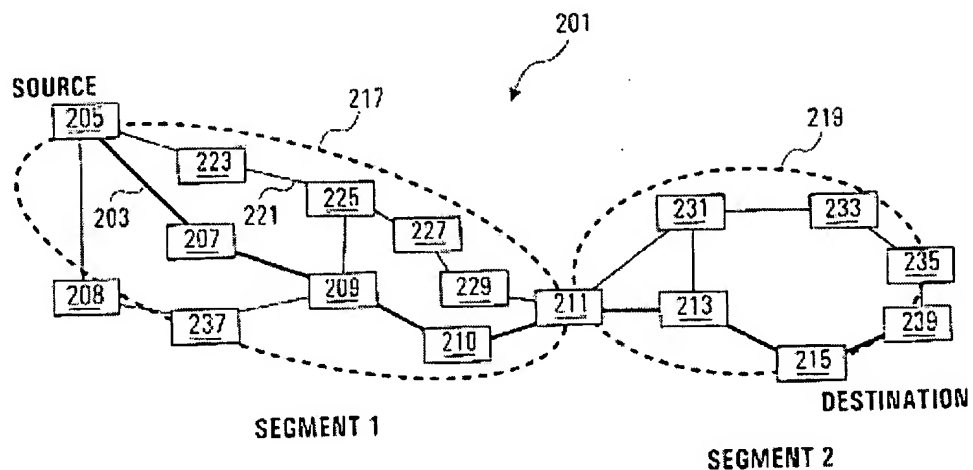
FIG. 7

Claims 34 and 39 have substantially similar limitations as in claim 24. Thus, they are rejected with the same rationale. Furthermore, since data packets or cells are forwarded or routed only using a label associated with the LSP, labeling or binding label to the packets/cells in accordance with sub paths between intermediate LSRs is an inherent process of an MPLS network as disclosed by the teachings of Carpini. Furthermore, since these features are performed using a computer system modules and a processor in the process of labeling and routing information on the MPLS network is inherently disclosed by the teaching of Carpini.

6. Claims 24-29, 31, 34 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Reeves et al. (US 20020071390 A1) hereinafter referred to as Reeves.

As per claim 24: Reeves disclosed a method of segmenting a label switched path (LSP) present in a multi-protocol label switching (MPLS) network, the LSP having an ingress label switched router (LSR), an egress LSR and intermediate nodes [Reeves, Abstract, Page 1, ¶0004-0005], the method comprising steps of:

Determining a subpath to be segmented in the LSP [Reeves Page 1, ¶0003) by defining a new partial path that is dynamically labeled by the LDP (Label Distribution Protocol)]; defining segments in the subpath; associating a label to each segment defined in the subpath [Reeves, Abstract, Page 1, ¶0004-0005, Reeves disclosed creating partial paths and allocating labeling resources to the partial paths].

As per claim 25: Reeves disclosed the ingress LSR and the egress LSR have a predetermined capability; at least a subset of said intermediate nodes are LSRS having the predetermined capabilities; and the step of defining segments in the subpath induces defining segments between LSRS having the predetermined capability [Reeves disclosed the LRS's predetermined capability including the ingress and egress LSR's having labeling (label allocation) capability by employing at least one LDP at each and every LSR, Page 1, ¶0005].

As per claim 26: Reeves disclosed notifying nodes in the LSP of the segmentation of the subpath [Abstract].

As per claim 27: As per claim notifying the nodes includes providing information to the nodes regarding a processing of data transfer units (DTUs) labeled in accordance with the labels associated with the segments of the subpath [Abstract, Page 1, ¶0004-0005, node(s) are notified regarding parameters associated with partial path or segment of the LSP].

As per claim 28: Reeves further disclosed that notifying the nodes is effected with a label distribution protocol (LDP) [Abstract, Page 1, ¶0004-0005 and Page 5, ¶0061].

As per claim 29 have limitation substantially similar to claim 25, thus it is rejected with the same rationale.

As per claim 31: Reeves disclosed the information includes routing information [Page 1, ¶0005, and Page 4, ¶0056, notification information (mapping information) or routing information used for routing of the partial/segment path is transmitted a node].

Claims 34 and 39 have substantially similar limitations as in claim 24. Thus, they are rejected with the same rationale. Furthermore, since data packets or cells are forwarded or routed only using a label associated with the LSP, labeling or binding label to the packets/cells in accordance with sub

paths between intermediate LSRs is an inherent process of an MPLS network

as disclosed by the teachings of Reeves.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived by
> the manner in which the invention was made.

8.   Claims 30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Reeves et al. (US 20020071390 A1) in view of Mark et al.

(U.S. Patent Number 7012933) hereinafter referred to as Mark.

> Note: MPLS is a widely supported technique of speeding up data communication
> over combined IP/ATM networks, which improves the speed of packet processing and
> enhances performance of the network. Having that said, According to the standard (RFC
> 3031), MPLS network comprises substantial limitations recited in the claims such as
> ingress LSR (label switched router), LSP (label switched path), intermediate LSRs for
> switching/routing the communication messages (DTUs). In this typical MPLS network
> ingress LSR receives inbound packets or cells (DTUs) and routes the message according
> to the label of the message from one intermediate node (LSR) to another using a labeling
> technique to a destination egress LSR, where outbound information is switched to
> destination device or network.

As per claims 30, 32 and 33:   Reeves substantially disclosed the

invention as claimed. However, failed teach the predetermined capability

information of the LSRs been OAM for determining a performance of a segment

of the sub path. However, as evidenced by the teaching of Mark LSRs capable

of processing OAM information for performance monitoring was known in the

art at the time the invention was made (Mark, Fig. 3, Fig. 5B, Fig. 8, Column 1,

Lines 33-67). Thus, it is respectfully submitted that it would have been

obvious to one of ordinary skill in the art at the time the invention was made to

take the teachings of Mark related to LSRs capable of processing OAM

information for performance monitoring and have modified the teachings of

Reeves related to segmenting an LSP in a MPLS network in order to interrogate

and control operation of the network and detect any deterioration of the

expected performance in the MPLS network (Mark, Column 1, Lines 41-63).

9.   Claims 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Carpini et al., (US 20030063613 A1) in view of Mark et al. (U.S. Patent

Number 7012933).

> Note: MPLS is a widely supported method of speeding up data communication
> over combined IP/ATM networks, which improves the speed of packet processing and
> enhances performance of the network. Having that said, According to the standard (RFC
> 3031), MPLS network comprises substantial limitations recited in the claims such as
> ingress LSR (label switched router), LSP (label switched path), intermediate LSRs for
> switching/routing the communication messages (DTUs). In this typical MPLS network
> ingress LSR receives inbound packets or cells (DTUs) and routes the message according
> to the label of the message from one intermediate node (LSR) to another using a labeling
> technique to a destination egress LSR, where outbound information is switched to
> destination device or network.

As per claims 35-38: Carpini substantially disclosed the invention as

claimed. However, failed teach the predetermined capability information of the

LSRs been OAM for determining a performance of a segment of the sub path,

the OAM information including a time stamp determining transmit time of the

DTU in accordance with the time stamp. However, as evidenced by the teaching

of Mark LSRs capable of processing OAM information for performance

monitoring was known in the art at the time the invention was made (Mark,

Fig. 3, Fig. 5B, Fig. 8, Column 1, Lines 33-67). Furthermore, it was commonly

known for an OAM cell or information to include a time stamp for determining

round trip delay measurement of (For example, see Poulin U.S. Patent Number

6545979, Title, Abstract and Column 2, Lines 30-42).

Thus, it is respectfully submitted that it would have been obvious to one

of ordinary skill in the art at the time the invention was made to take the

commonly known teaching of embedding a time stamp within a packet or OAM

cell and the teachings of Mark related to LSRs capable of processing OAM

information for performance monitoring and have modified the teachings of

Carpini related to segmenting an LSP in a MPLS network in order to determine

round trip delay measurement of the OAM cell and further to interrogate and

control operation of the network and detect any deterioration of the expected

performance in the MPLS network (Mark, Column 1, Lines 41-63).

Conclusion

10.   The prior art made of record (see Form PTO-892) and not relied upon is

considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Yemane M. Gerezgiher whose
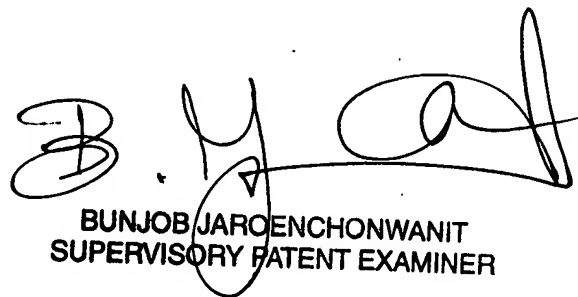
telephone number is (571) 272-3927. The examiner can normally be reached on 9:00 AM - 6:00 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yemane M. Gerezgiher
Patent Examiner, Computer Science

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SUPERVISORY PATENT EXAMINER